#### Trend Study 27R-11-98

Study site name: Cockscomb Outside.

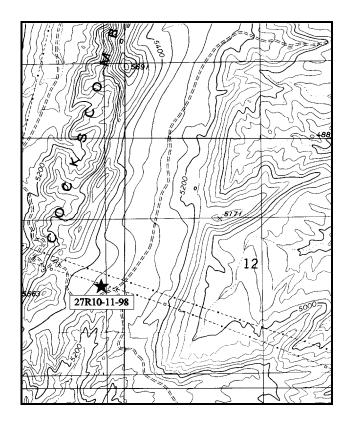
Range type: <u>Desert Brush</u>.

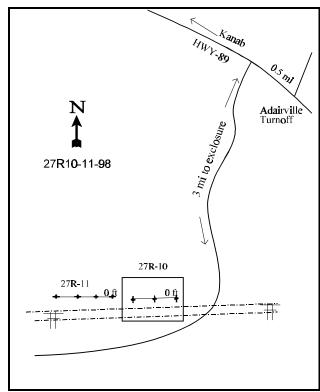
Compass bearing: frequency baseline 270°M degrees.

Footmark (first frame placement) <u>5</u> feet. Frequency belt placement; line 1 (11ft & 95 ft), line 2 (59ft), line 3 (34ft & 71 ft).

# **LOCATION DESCRIPTION**

From HWY-89 and the Adairville turnoff (east of Kanab on south-89), go 0.5 miles west to a left turn. Turn left here and go 3 miles to an exclosure underneath the power lines. The baseline starts on the west side of the exclosure and can be located by counting up to the second metal post from the SW corner.





Map Name: West Clark Bench

Township 43S, Range 2W, Section 11

Diagrammatic Sketch

UTM 4104565.072 N, 412971.257 E

#### DISCUSSION

#### Trend Study No. 27R-11

This is a new trend study placed outside the livestock exclosure. The Cockscomb Exclosure is located about 30 miles east of Kanab and about 7 miles north of the Arizona-Utah border. This is a two-way exclosure (livestock and outside) in the most northern reaches of a hot desert shrub community at an elevation of approximately 5,360 feet. The aspect is to the east with a slight slope (6-7%). The site is located beneath a high voltage power line adjacent to the exclosure. A pellet group transect indicated 19 deer use days/acre and 10 cow days use/acre. A moderate density of rabbit pellet groups were also encountered.

Soil textural analysis indicates it to be a sandy loam soil with a neutral pH (6.9). Average effective rooting depth (see methods) is estimated to be 20 inches with an average soil temperature of 79°F at 14 inches. Both potassium and phosphorous measurements were low, 3.2 ppm and 2.7 ppm respectively, and may limit plant development. Values of 10 ppm for potassium and 70 ppm for phosphorous are considered the minimum for normal plant development. Rocks and pavement were encountered on the soil surface and combined they only provided almost 2% cover. Although percent bare ground cover is high (54%), there is little erosion apparent at this time due to the soil texture and the lack of significant slope.

Browse species currently provide 52% of the vegetative cover. The most abundant species include: shinnery oak, green ephedra, penstemon sp., yucca, and broom snakeweed. Shinnery oak has an estimated density of 4,280 stems/acre. Most of these plants are classified as mature (70%) and young (24%). Three seedlings were sampled in 1998. Percent decadency is estimated to 6% with 69% of these plants classified as dying. The dead to live ratio is 1:10, or 9% of the population is dead. Utilization is light and most plants exhibit good vigor. This population currently appears to be a stable. Green ephedra has an estimated density of 1,700 plants/acre. No seedling plants were encountered and 61% of the population were classified as mature. All of the decadent plants exhibited poor vigor and classified as chlorotic or dying. Twenty-two percent of the population exhibited poor vigor in 1998.

A shrubby penstemon spp. was encountered with an estimated density of 860 plants/acre. This is a mostly mature population with only one seedling sampled. No decadent plants were encountered and the dead to live ratio is 1:4 (20% were dead). Yucca has an estimated density of 660 plants/acre. This was also a mostly mature population with 85% of the plants classified as mature and 15% classified as young. Broom snakeweed had an estimated density of 500 plants/acre. Eighty-eight percent of the pants were classified as mature and the remaining 12% classified as young. Other browse species scattered throughout the area include: prickly pear cactus, sand sagebrush, buckwheat, and gray horsebrush.

Grass currently contributes 67% of the herbaceous understory cover. Sandhill muhly is the most abundant of the grass species, followed by Indian ricegrass and sand dropseed. Although annual species percent cover is low, they still account for 50% of the grass sum of nested frequency. Six weeks fescue provides 27% of the grass cover and 18% of the herbaceous understory cover. Cheatgrass is also present but in low abundance.

The forb component is dominated by perennial species that include: Cruciferae spp., fineleaf hymenopappus, and purple funnellily. Other perennial species scattered throughout the site include: bastard toadflax, Utah deervetch, and pale evening primrose. Only one annual forb was encountered (Gilia spp.) and is in low abundance.

#### 1998 APPARENT TREND ASSESSMENT

Erosion is currently minimal with only slight soil movement apparent with some pedestaling noted around some the shrubs. Seedlings were encountered for a few of the browse species (broom snakeweed, buckwheat, penstemon sp., and shinnery oak). All of the browse species exhibited light utilization. With the exception of

green ephedra, all browse species showed good vigor. The herbaceous understory is relatively diverse, although most species were seldom sampled.

# HERBACEOUS TRENDS --

Herd unit 27R, Study no: 11

G Bouteloua gracilis         22         9         .1°           G Bromus tectorum (a)         30         11         .1°           G Muhlenbergia pungens         144         47         4.0           G Oryzopsis hymenoides         31         17         .2°           G Sporobolus cryptandrus         27         12         .3°           G Stipa comata         28         10         .1°           G Stipa lettermani         -         -         .0°           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .4°           F Arabis spp.         3         1         .0°           F Artemesia carruthii         4         2         .1³           F Comandra pallida         21         7         .1°           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus <th>over % '98</th> <th>Cov</th> <th>Quadrat Frequency '98</th> <th>Nested Frequency '98</th> <th>Species</th>	over % '98	Cov	Quadrat Frequency '98	Nested Frequency '98	Species						
G Bromus tectorum (a)         30         11         .12           G Muhlenbergia pungens         144         47         4.0           G Oryzopsis hymenoides         31         17         .22           G Sporobolus cryptandrus         27         12         .30           G Stipa comata         28         10         .12           G Stipa lettermani         -         -         .00           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Hymenopappus filifoliu	.03	.(	1	1	Aristida purpurea						
G Muhlenbergia pungens         144         47         4.0           G Oryzopsis hymenoides         31         17         .22           G Sporobolus cryptandrus         27         12         .3e           G Stipa comata         28         10         .1f           G Stipa lettermani         -         -         .00           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .44           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .18           F Comandra pallida         21         7         .11           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Erigeron pumilus         2         1         .0°           F Hymenopappus filifolius         53         21         .9°           F Machaeranthera	.17		9	22	Bouteloua gracilis						
G Oryzopsis hymenoides 31 17 .22 G Sporobolus cryptandrus 27 12 .36 G Stipa comata 28 10 .13 G Stipa lettermani00 G Vulpia octoflora (a) 218 72 1.8 Total for Annual Grasses 248 83 1.9 Total for Perennial Grasses 253 96 4.9 Total for Grasses 501 179 6.9 F Androstephium breviflorum 55 23 .40 F Arabis spp. 3 1 .00 F Artemesia carruthii 4 2 .11 F Comandra pallida 21 7 .13 F Cruciferae 32 16 1.1 F Cruciferae 32 16 1.1 F Cryptantha spp. 7 4 .00 F Erigeron pumilus 2 1 .00 F Hymenopappus filifolius 53 21 .93 F Lotus utahensis 18 8 .11 F Machaeranthera canescens 5 3 .03 F Oenothera pallida 20 8 .10 F Phlox longifolia 3 1 .00 F Sphaeralcea coccinea 1 1 .00 F Sphaeralcea parvifolia 3 2 .00 F Townsendia spp. 9 5 .02 Total for Annual Forbs 10 .00 Total for Annual Forbs 10 .00	.13		11	30	Bromus tectorum (a)						
G Sporobolus cryptandrus         27         12         .36           G Stipa comata         28         10         .12           G Stipa lettermani         -         -         .00           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .46           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0°           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens	4.03	4.	47	144	Muhlenbergia pungens						
G Stipa comata         28         10         .13           G Stipa lettermani         -         -         .00           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0°           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Oenothera pallida         20         8         .1°           F Phlox longifolia         3 <td>.22</td> <td></td> <td>17</td> <td>31</td> <td>Oryzopsis hymenoides</td>	.22		17	31	Oryzopsis hymenoides						
G Stipa lettermani         -         -         0.00           G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .12           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .00           F Erigeron pumilus         2         1         .00           F Gilia spp. (a)         10         3         .02           F Hymenopappus filifolius         53         21         .92           F Lotus utahensis         18         8         .17           F Oenothera pallida         20         8         .10           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia	.36	•	12	27	Sporobolus cryptandrus						
G Vulpia octoflora (a)         218         72         1.8           Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .00           F Gilia spp. (a)         10         3         .0-           F Hymenopappus filifolius         53         21         .99           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia <td>.13</td> <td></td> <td>10</td> <td>28</td> <td>Stipa comata</td>	.13		10	28	Stipa comata						
Total for Annual Grasses         248         83         1.9           Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0°           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.	.00	).	-	-	Stipa lettermani						
Total for Perennial Grasses         253         96         4.9           Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .44           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .18           F Comandra pallida         21         7         .12           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0°           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial	1.85	1.	72	218	Vulpia octoflora (a)						
Total for Grasses         501         179         6.9           F Androstephium breviflorum         55         23         .40           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0²           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10 </td <td>1.98</td> <td>1.</td> <td>83</td> <td>248</td> <td colspan="7">Total for Annual Grasses</td>	1.98	1.	83	248	Total for Annual Grasses						
F Androstephium breviflorum         55         23         .46           F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .18           F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0²           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10         3         0.0°	4.96	4.	96	253	Total for Perennial Grasses						
F Arabis spp.         3         1         .00           F Artemesia carruthii         4         2         .13           F Comandra pallida         21         7         .12           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0²           F Hymenopappus filifolius         53         21         .9²           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10         3         0.0°	6.95	6.	179	501	Total for Grasses						
F Artemesia carruthii 4 2 .18 F Comandra pallida 21 7 .13 F Cruciferae 32 16 1.1 F Cryptantha spp. 7 4 .07 F Erigeron pumilus 2 1 .00 F Gilia spp. (a) 10 3 .04 F Hymenopappus filifolius 53 21 .99 F Lotus utahensis 18 8 .17 F Machaeranthera canescens 5 3 .09 F Oenothera pallida 20 8 .10 F Sphaeralcea coccinea 1 1 .00 F Sphaeralcea parvifolia 3 2 .00 F Townsendia spp. 9 5 .00 F Unknown forb-perennial 4 2 .00 Total for Annual Forbs 10 3 0.00	.40		23	55	Androstephium breviflorum						
F Comandra pallida         21         7         .13           F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .00           F Gilia spp. (a)         10         3         .0²           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Phlox longifolia         3         1         .0°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10         3         0.0°	.00	.0	1	3	Arabis spp.						
F Cruciferae         32         16         1.1           F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0°           F Hymenopappus filifolius         53         21         .9°           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Phlox longifolia         3         1         .0°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10         3         0.0°	.18	•	2	4	Artemesia carruthii						
F Cryptantha spp.         7         4         .0°           F Erigeron pumilus         2         1         .0°           F Gilia spp. (a)         10         3         .0²           F Hymenopappus filifolius         53         21         .9²           F Lotus utahensis         18         8         .1°           F Machaeranthera canescens         5         3         .0°           F Oenothera pallida         20         8         .1°           F Phlox longifolia         3         1         .0°           F Sphaeralcea coccinea         1         1         .0°           F Sphaeralcea parvifolia         3         2         .0°           F Townsendia spp.         9         5         .0°           F Unknown forb-perennial         4         2         .0°           Total for Annual Forbs         10         3         0.0°	.13		7	21	Comandra pallida						
F Erigeron pumilus         2         1         .00           F Gilia spp. (a)         10         3         .04           F Hymenopappus filifolius         53         21         .94           F Lotus utahensis         18         8         .17           F Machaeranthera canescens         5         3         .05           F Oenothera pallida         20         8         .16           F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .00           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	1.14	1.	16	32	Cruciferae						
F Gilia spp. (a)         10         3         .04           F Hymenopappus filifolius         53         21         .94           F Lotus utahensis         18         8         .17           F Machaeranthera canescens         5         3         .05           F Oenothera pallida         20         8         .16           F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .05           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.07	).	4	7	Cryptantha spp.						
F Hymenopappus filifolius         53         21         .99           F Lotus utahensis         18         8         .17           F Machaeranthera canescens         5         3         .09           F Oenothera pallida         20         8         .16           F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .00           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.00	).	1	2	Erigeron pumilus						
F Lotus utahensis         18         8         .17           F Machaeranthera canescens         5         3         .06           F Oenothera pallida         20         8         .16           F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .01           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.04	).	3	10	Gilia spp. (a)						
F Machaeranthera canescens         5         3         .05           F Oenothera pallida         20         8         .16           F Phlox longifolia         3         1         .06           F Sphaeralcea coccinea         1         1         .06           F Sphaeralcea parvifolia         3         2         .07           F Townsendia spp.         9         5         .07           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.95	.9	21	53	Hymenopappus filifolius						
F Oenothera pallida         20         8         .10           F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .00           F Townsendia spp.         9         5         .00           F Unknown forb-perennial         4         2         .00           Total for Annual Forbs         10         3         0.0	.17		8	18	Lotus utahensis						
F Phlox longifolia         3         1         .00           F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .01           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.05	).	3	5	Machaeranthera canescens						
F Sphaeralcea coccinea         1         1         .00           F Sphaeralcea parvifolia         3         2         .00           F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.16		8	20	Oenothera pallida						
F Sphaeralcea parvifolia         3         2         .0           F Townsendia spp.         9         5         .0           F Unknown forb-perennial         4         2         .0           Total for Annual Forbs         10         3         0.0	.00	).	1	3	Phlox longifolia						
F Townsendia spp.         9         5         .02           F Unknown forb-perennial         4         2         .03           Total for Annual Forbs         10         3         0.0	.00	).	1	1	Sphaeralcea coccinea						
F Unknown forb-perennial 4 2 .03 Total for Annual Forbs 10 3 0.0	.01	).	2	3	Sphaeralcea parvifolia						
Total for Annual Forbs 10 3 0.0	.02	).	5	9	Townsendia spp.						
	.03	).	2	4	F Unknown forb-perennial						
Total for Perennial Forbs 240 105 3.3	0.03	0.	3	10	otal for Annual Forbs						
	3.37	3.	105	240	otal for Perennial Forbs						
Total for Forbs 250 108 3.4	3.41	3.	108	250	otal for Forbs						

BROWSE TRENDS --

Herd unit 27R, Study no: 11

T y p e	Species	Strip Frequency '98	Average Cover % '98
В	Artemisia filifolia	8	-
В	Ephedra viridis	24	1.70
В	Eriogonum spp.	14	.89
В	Gutierrezia sarothrae	18	.43
В	Juniperus osteosperma	-	.18
В	Opuntia polyacantha	5	.06
В	Penstemon spp.	22	.90
В	Quercus havardii	36	7.11
В	Tetradymia canescens	1	.15
В	Yucca spp.	9	-
To	otal for Browse	137	11.43

# BASIC COVER --

Herd unit 27R, Study no: 11

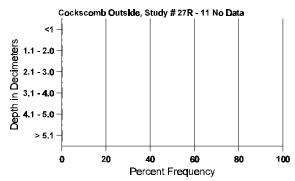
Cover Type	Nested Frequency '98	Average Cover % '98
Vegetation	370	31.28
Rock	42	.28
Pavement	130	1.41
Litter	466	33.50
Bare Ground	435	53.82

#### SOIL ANALYSIS DATA --

Herd Unit 27R, Study # 11, Study Name: Cockscomb Outside

Effective rooting depth (inches)	Temp °F (depth)	рН	%sand	%silt	%clay	%0M	РРМ Р	РРМ К	dS/m
19.7	79.3 (14.2)	6.9	72.2	18.0	9.84	.3	2.7	3.2	.3

# Stoniness Index



# PELLET GROUP FREQUENCY --Herd unit 27R, Study no: 11

Туре	Quadrat Frequency '98
Rabbit	18
Deer	12
Cattle	1

# BROWSE CHARACTERISTICS --

Herd unit 27R, Study no: 11

A Y Form Class (No. of Plants) G R										Vigor Class				Plants Per Acre	Total			
E		1	2	3	4	5	6	7	8	9	1	2	3	4	1 01 11010	(inches) Ht. Cr.		
Arten	nisia fil	ifolia	ì							•								
M 98		9	-	-	-	-	-	-	-	-	9	-	-	-	180	26	27	9
X 98		-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
							oor Vigor )%				<u>(</u>	%Change						
Total	Plants	/Acre	e (exc	luding	Dead	& See	edlings	s)					'98		180	Dec:		-
Ephedra viridis																		
Y 98	2	8	-	-	-	-	-	2	-	-	29	-	1	-	600			30
M 98	3	7	7	-	7	-	-	1	-	-	37	-	15	-	1040	14	18	52
D 98		3	-	-	-	-	-	-	-	-	-	-	1	2	60			3
X 98		-	-	-	-	-	-	-	-	-	-	-	-	-	120			6
% Pla	nts Sh	owin '98	g	Mod 08%	lerate	<u>Use</u>	<u>Hea</u>	vy Us	<u>e</u>		oor Vigor 2%				<u>.</u>	%Change		
Total	Plants	/Acre	e (exc	luding	Dead	& See	edlings	s)					'98		1700	Dec:		4%
Eriog	onum	spp.																
S 98		1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M 98	1.	5	-	-	1	-	-	-	-	-	16	-	-	-	320	14	25	16
X 98		-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Pla	nts Sh	owin '98	g	Mod 00%	lerate	<u>Use</u>	<u>Hea</u>	vy Us	<u>e</u>		oor Vigor )%				<u>.</u>	%Change		
Total	Plants	/Acre	e (exc	luding	Dead	& See	edlings	s)					'98		320	Dec:		-
Gutie	rrezia s	sarotl	hrae															
S 98		6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
Y 98		3	-	-	-	-	-	-	-	-	3	-	-		60			3
M 98	2	2	-	-	-	-	-	-	-	-	22	-	-	-	440	8	13	22
X 98		-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
% Pla										oor Vigor )%				<u>(</u>	%Change			
Total	Plants	/Acre	e (exc	luding	Dead	& See	edlings	s)					'98		500	Dec:		-

A Y G R									Vigor Cla	ass			Plants Per Acre	Average	Total	
E	1	2	3	4	5	6	7	8	9	1	2	3	4	Per Acre	(inches) Ht. Cr.	
Opunti	a polyaca	antha														
M 98	5	-	-	1	-	-	-	-	-	6	-	-	-	120	7 11	6
D 98	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
% Plan	% Plants Showing Moderate Use 00% Heavy Use 00%					<u>e</u>	<u>Po</u>	oor Vigor 9%				-	%Change			
Total F	Total Plants/Acre (excluding Dead & Seedlings)									'98		180	Dec:	33%		
Penster	mon spp.															
S 98	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
Y 98	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7
M 98	35	-	-	-	-	-	1	-	-	36	-	-	-	720	16 21	36
X 98	-	-	-	-	-	-	-	-	-	-	-	-	-	280		14
% Plan	ts Showi '98	ng	<u>Mo</u>	derate %	Use	<u>Hea</u>	vy Us 6	<u>e</u>	<u>Po</u>	oor Vigor )%				-	%Change	
Total F	Plants/Ac	re (exc	luding	g Dead	l & Se	edling	s)					'98		860	Dec:	-
Quercu	ıs havard	ii												_		
S 98	6	-	-	-	-	-	-	-	-	6	-	-	-	120		6
Y 98	52	-	-	-	-	-	-	-	-	52	-	-	-	1040		52
M 98	121	10	-	18	-	-	-	-	-	146	-	3	-	2980	29 22	149
D 98	10	2	-	1	-	-	-	-	-	3	-	1	9	260		13
X 98	-	-	-	-	-	-	-	-	-	-	-	-	-	460		23
% Plan	ts Showi '98	ng	<u>Mo</u> 06%	derate %	Use	<u>Hea</u>	vy Us	<u>e</u>	<u>Po</u>	oor Vigor 5%				<u>.</u>	%Change	
Total F	Plants/Ac	re (exc	luding	g Dead	l & Se	edling	s)					'98		4280	Dec:	6%
	ymia can	escens														
M 98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	11 30	0
D 98	1	-	-	-	=	-	-	-	-	1	-	-	-	20		1
% Plan	ts Showi '98	ng	<u>Mo</u>	derate %	Use	<u>Hea</u>	vy Us	<u>e</u>	<u>Po</u>	oor Vigor 9%				- -	%Change	
Total F	Plants/Ac	re (exc	luding	g Dead	l & Se	edling	s)					'98		20	Dec:	100%
Yucca	spp.															
Y 98	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5
M 98	28	-	-	-	-	-	-	-		28	-	-	_	560	17 22	28
% Plan	ts Showi '98	ng	<u>Mo</u>	derate %	Use	<u>Hea</u>	vy Us	<u>e</u>	<u>Po</u>	oor Vigor 9%				-	%Change	
Total F	Plants/Ac	re (exc	luding	g Dead	l & Se	edling	s)					'98		660	Dec:	-